Movement and Immobility

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Last Updated Wednesday, 08 November 2006

Call them qualities, forms, positions, or intentions, as the case may be, multiply the number of them as you will, let the interval between two consecutive states be infinitely small: before the intervening movement you will always experience the disappointment of the child who tries by clapping his hands together to crush the smoke. The movement slips through the interval, because every attempt to re-constitute change out of states implies the absurd proposition, that movement is made of immobilities.

Philosophy perceived this as soon as it opened its eyes. The arguments of Zeno of Elea, although formulated with a very different intention, have no other meaning.

Take the flying arrow. At every moment, says Zeno, it is motionless, for it cannot have time to move, that is, to occupy at least two successive positions, unless at least two moments are allowed it. At a given moment , therefore, it is at rest at a given point. Motionless in each point of its course, it is motionless during all the time that it is moving.

Yes, if we suppose that the arrow can ever be in a point of its course. Yes again, if the arrow, which is moving, ever coincides with a position, which is motionless. But the arrow never is in any point of its course. The most we can say is that it might be there, in this sense, that it passes there and might stop there. It is true that if it did stop there, it would be at rest there, and at this point it is no longer movement that we should have to do with.

The truth is that if the arrow leaves the point A to fall down at the point B, its movement AB is as simple, as indecomposable, in so far as it is movement, as the tension of the bow that shoots it. As the shrapnel, bursting before it falls to the ground, covers the explosive zone with an indivisible danger, so the arrow which goes from A to B displays with a single stroke, although over a certain extent of duration, its indivisible mobility. Suppose an elastic stretched from A to B, could you divide its extension? The course of the arrow is this very extension; it is equally simple and equally undivided. It is a single and unique bound. You fix a point C in the interval passed, and say that at a certain moment the arrow was in C. If it had been there, it would have been stopped there, and you would no longer have had a flight from A to B, but two flights, one from A to C and the other from C to B, with an interval of rest. A single movement is entirely, by the hypothesis, a movement between two stops; if there are intermediate stops, it is no longer a single movement.

At bottom, the illusion arises from this, that the movement, once effected, has laid along its course a motionless trajectory on which we can count as many immobilities as we will. From this we conclude that the movement, whilst being effected, lays at each instant beneath it a position with which it coincides. We do not see that the trajectory is created in one stroke, although a certain time is required for it; and that though we can divide at will the trajectory once created, we cannot divide its creation, which is an act in progress and not a thing. To suppose that the moving body is at a point of its course is to cut the course in two by a snip of the scissors at this point, and to substitute two trajectories for the single trajectory which we were first considering. It is to distinguish two successive acts where, by the hypothesis, there is only one.

In short, it is to attribute to the course itself of the arrow everything that can be said of the interval that the arrow has traversed, that is to say, to admit a priori the absurdity that movement coincides with immobility.